

<b>Title</b>	FID4042	
<b>Release</b>	Revision 2.0	
<b>Document Number</b>	TD-12-001	

## APPROVALS

<b>Title</b>	<b>Name</b>	<b>Date</b>	<b>Signature</b>
Engineering Manager	B.Petolas		
Technical Director	A Mosher		
Quality	D Steel		
Senior Software Developer	John Nassar		

## REVISION HISTORY

<b>Rev</b>	<b>Description of Changes</b>	<b>Author of Change</b>	<b>Effective Date (mm/dd/yyyy)</b>
1.0	Initial release	A.M.	01/12/2012
2.0	Data name changes. Changes to Min and Max values.	J.N	02/10/2012

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## PURPOSE

To specify and document the transmitted data format used by NOVA software.

## Housekeeping Data Packet Format

This packet will contain a complete diagnostic of the float behaviour during the past cycle.

Data Name	Description	Units	Min	Max	Start byte	Bit Length	Decoding Equation
MSG_ID	Packet Identity, 1 = Housekeeping	--	1	1	1	8	$y = x$
NB_BYTES	Number of bytes in message	--	63	63	2	16	$y = x$
EDT	Time in the day when the float ended its descent to parking	hour	0	23.9	4	8	$y = 0.1 * x$
FST	Time in the day when the float first activated the valve during its descent	hour	0	23.9	5	8	$y = 0.1 * x$
DDST	Time in the day when the float started its descent to profile depth	hour	0	23.9	6	8	$y = 0.1 * x$
DDET	Time in the day when the float achieved its profile depth	hour	0	23.9	7	8	$y = 0.1 * x$
SAT	Time in the day when the float started its ascending profile	hour	0	23.9	8	8	$y = 0.1 * x$
EAT	Time in the day when the float ended its ascending profile	hour	0	23.9	9	8	$y = 0.1 * x$
NVS	Number of valve activations at surface	--	0	255	10	8	$y = x$
NVDPA	Number of valve activations during the descent to parking	--	0	255	11	8	$y = x$
NPDPA	Number of pump activations during the descent to parking	--	0	255	12	8	$y = x$
NVDPR	Number of valve activations during the descent to profile	--	0	255	13	8	$y = x$
NPDPR	Number of pump activations during the descent to profile	--	0	255	14	8	$y = x$
NPAS	Number of pump activations during the ascent to surface	--	0	255	15	8	$y = x$
NDCPA	Number of depth corrections during parking	--	0	255	16	8	$y = x$
NEPAZ	Number of entries in parking zone	--	0	255	17	8	$y = x$
FSPD	First stabilization pressure during descent	bar	0	250	18	8	$y = x$

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MAPPA	Maximum pressure recorded during parking	bar	0	250	19	8	$y = x$
MIPPA	Minimum pressure recorded during parking	bar	0	250	20	8	$y = x$
MAP	Maximum pressure recorded during the cycle	bar	0	250	21	8	$y = x$
NPD	Number of CTD points in descent profile	--	0	560	22	16	$y = x$
NMD	Number of messages in descent profile	--	0	20	24	8	$y = x$
NPA	Number of CTD points in ascent profile	--	0	560	25	16	$y = x$
NMA	Number of messages in ascent profile	--	0	20	27	8	$y = x$
NPPA	Number of CTD points in parking	--	0	280	28	16	$y = x$
NMPA	Number of messages in parking	--	0	6	30	8	$y = x$
NMPS	Number of messages in pressure	--	0	3	31	8	$y = x$
PO	CTD Pressure Offset	dBar	-51.2	51.1	32	16	$y = 0.1 \cdot x - 3276.8$
IV	Internal vacuum	mBar	306	1150	34	16	$y = x$
GDS	Grounding detection at surface	--	0	1	36	8	$y = x$
GDD	Grounding detection during descent	--	0	1	37	8	$y = x$
CN	Cycle Number	--	0	255	38	8	$y = x$
BV	Battery Voltage	Volts	0	20.0	39	8	$y = 0.1 \cdot x$
NPRCTD	Number of Power Resets CTD	--	0	255	40	8	$y = x$
NFACTD	Number of Failed Acquisitions CTD	--	0	255	41	8	$y = x$
NPRI	Number of Power Resets iridium	--	0	255	42	8	$y = x$
NIPQ	Number of Incoming Iridium Packets Received during previous session	--	0	255	43	8	$y = x$
NPRG	Number of Power Resets GPS	--	0	255	44	8	$y = x$
GPSLAT	GPS Latitude	degrees	-90	90	45	32	$y = 1E-7 \cdot x - 214.7483648$
GPSLONG	GPS Longitude	degrees	-180	180	49	32	$y = 1E-7 \cdot x - 214.7483648$
DLF	Day of month of last GPS fix	day	1	31	53	8	$y = x$
TLF	Time of Last GPS Fix	hour	0	23.9	54	8	$y = 0.1 \cdot x$
EA	Emergency Ascent Flag	--	0	1	55	8	$y = x$
WTO	Watchdog Timeout Flag	--	0	1	56	8	$y = x$
NPPM	Number of Hydraulic Records	--	0	255	57	8	$y = x$
DTSC	Date and time at the start of the cycle	hour	0	23.9	58	8	$y = 0.1 \cdot x$
		day	1	31	59	8	$y = x$
		month	1	12	60	8	$y = x$
		Year	0	255	61	8	$y = x + 2000$

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TTFF	Time to First Fix	seconds	0	510	62	8	$y=2*x$
SBDT	Time needed to transmit last housekeeping message	seconds	0	510	63	8	$y=2*x$

**Notes:**

1. The METOCEAN product has applied all sensor calibration factors before encoding the data.
2. The above table shows the decoding algorithm that can be used to decode buoy transmissions directly to engineering units